WHAT IS CLAIMED IS:

1. An apparatus for redirecting fluid flow therethrough, the apparatus comprising:

a flow passage extending in the apparatus;

a flow region in communication with the flow passage;

a tool operative in conjunction with fluid in the flow region; and

multiple flow restrictors in the flow passage, the flow restrictors being operative to influence at least a portion of the fluid to flow from the flow passage to the flow region.

2. The apparatus according to claim 1, wherein the flow restrictors include projections extending into the flow passage.

3. The apparatus according to claim 2, wherein the projections are generally annular-shaped.

4. The apparatus according to claim 1, wherein the flow restrictors include recesses extending outwardly from the flow passage into a sidewall surrounding the flow passage.

5. The apparatus according to claim 1, wherein a resistance to fluid flow through the flow restrictors varies in response to a rate of fluid flow through the flow passage.

6. The apparatus according to claim 1, wherein a internal dimension permitting access through the flow restrictors varies in response to a rate of fluid flow through the flow passage.

7. The apparatus according to claim 1, wherein the flow restrictors influence the fluid to rotate about a longitudinal axis of the flow passage.

8. The apparatus according to claim 1, wherein the flow restrictors form alternating fluid expansion and contraction regions in the flow passage.

9. The apparatus according to claim 1, wherein the flow restrictors are generally helically configured about the flow passage.

10. The apparatus according to claim 1, wherein the tool is an electrical power generator which operates in response to fluid flow through the flow region.

11. An electrical power generating system for use in a subterranean well, the system comprising:

a first flow passage formed through a tubular string in the well;

a flow region in communication with the first flow passage;

an electrical power generator operative in response to flow of fluid through the flow region; and

multiple flow restrictors in the first flow passage, the flow restrictors being operative to influence at least a portion of the fluid to flow from the first flow passage through the flow region.

12. The system according to claim 11, wherein the flow region comprises a second flow passage, and wherein each of a flow inlet and a flow outlet of the second flow passage is in communication with the first flow passage.

13. The system according to claim 11, wherein the flow region comprises a lateral extension of the first flow passage, with no flow barrier between the first flow passage and the flow region.

14. The system according to claim 11, wherein the flow restrictors influence the fluid to rotate about a longitudinal axis of the first flow passage.

15. The system according to claim 11, wherein the flow restrictors comprise generally annular-shaped rings projecting inwardly into the first flow passage.

16. The system according to claim 15, wherein each of the rings has a generally rectangular cross-section.

17. The system according to claim 15, wherein each of the rings has a generally wedge-shaped cross-section.

18. The system according to claim 17, wherein a laterally inclined face of each of the rings is oriented in an upstream direction relative to the first flow passage.

19. The system according to claim 15, wherein the rings are generally helically configured.

20. The system according to claim 15, wherein the rings influence the fluid to rotate about a longitudinal axis of the first flow passage.

21. The system according to claim 11, wherein the flow restrictors comprise projections extending into the first flow passage, the projections being spaced apart in the first flow passage.

22. The system according to claim 21, wherein the projections are circumferentially and longitudinally spaced apart in the first flow passage.

23. The system according to claim 21, wherein the projections are helically distributed in the first flow passage.

24. The system according to claim 21, wherein the projections influence the fluid to rotate about a longitudinal axis of the first flow passage.

25. The system according to claim 21, wherein each of the projections has a generally rectangular cross-section.

26. The system according to claim 21, wherein each of the projections has a generally wedge-shaped cross-section.

27. The system according to claim 26, wherein a laterally inclined face of each of the projections faces in an upstream direction relative to the first flow passage.

28. The system according to claim 21, wherein each of the projections has a generally hemispherical shape.

29. The system according to claim 21, wherein each of the projections has a generally tetrahedron shape.

30. The system according to claim 21, wherein each of the projections has a generally pyramid shape.

31. The system according to claim 21, wherein fluid flow between first and second ones of the projections is directed to impinge on a third one of the projections.

32. The system according to claim 21, wherein each of the projections is a whisker.

33. The system according to claim 32, wherein the whiskers are grouped into spaced apart bands in the first flow passage.

34. The system according to claim 33, wherein the bands form alternating fluid expansion and contraction regions in the first flow passage.

35. The system according to claim 11, wherein the flow restrictors comprise recesses formed in a wall surrounding the first flow passage.

36. The system according to claim 35, wherein each of the recesses has a generally rectangular profile.

37. The system according to claim 35, wherein each of the recesses has a generally wedge-shaped profile.

38. The system according to claim 37, wherein a laterally inclined face of the profile faces in an upstream direction relative to the first flow passage.

39. The system according to claim 35, wherein the recesses are generally annular-shaped.

40. The system according to claim 35, wherein the recesses are generally helically configured about the flow passage.

41. The system according to claim 35, wherein the recesses influence the fluid to rotate about a longitudinal axis of the first flow passage.

42. The system according to claim 11, wherein the flow restrictors are formed on a generally bellows-shaped device.

43. The system according to claim 42, wherein the device is expandable in a longitudinal direction relative to the first flow passage.

44. The system according to claim 42, wherein the device has a minimum internal dimension which varies in response to a rate of fluid flow through the first flow passage.

45. The system according to claim 44, wherein the minimum internal dimension decreases as the rate of fluid flow increases.

46. The system according to claim 44, further comprising a biasing device which biases the bellows-shaped device to a configuration in which the minimum internal dimension is at a maximum value.

47. The system according to claim 42, wherein the device increasingly influences the fluid to flow through the flow region, instead of through the first flow passage, as the rate of fluid flow increases.

48. The system according to claim 11, wherein the flow restrictors are grouped in longitudinally spaced apart sets of multiple ones of the flow restrictors which thereby form alternating fluid expansion and contraction regions in the first flow passage.

49. The system according to claim 11, wherein the flow restrictors are positioned upstream of the flow region.

50. The system according to claim 49, wherein the flow restrictors influence the fluid to rotate about a longitudinal axis of the first flow passage, thereby directing the fluid to flow laterally into the flow region.

51. The system according to claim 11, wherein the flow restrictors are helically configured relative to a longitudinal axis of the first flow passage.

52. The system according to claim 11, wherein the flow restrictors have multiple different spacings therebetween.

53. The system according to claim 52, wherein the different spacings are alternated along the first flow passage.

54. The system according to claim 11, wherein the flow restrictors have multiple different sizes.

55. The system according to claim 11, wherein the flow restrictors are grouped into multiple sets of the flow restrictors, a first set of the flow restrictors influencing the fluid to rotate in a first direction relative to a longitudinal axis of the first flow passage, and a second set of the flow restrictors influencing the fluid to rotate in a second direction opposite to the first direction relative to the first flow passage axis.

56. The system according to claim 55, wherein each of the sets includes multiple ones of the flow restrictors.

57. The system according to claim 11, wherein each of the flow restrictors has an opening formed therethrough, and wherein the fluid flows through the openings when the fluid flows through the first flow passage.

58. An apparatus for redirecting fluid flow therethrough, the apparatus comprising:

a flow passage extending in the apparatus;

a flow region in communication with the flow passage on a first lateral side of the flow passage;

a tool operative in conjunction with fluid in the flow region; and

an intersection between the flow passage and the flow region upstream of the tool, the intersection having a relatively smooth first internal profile on the first lateral side of the flow passage, thereby influencing the fluid to flow toward the flow region.

59. The apparatus according to claim 58, wherein the intersection has a second internal profile on a second lateral side of the flow passage opposite the first lateral side, the second internal profile having a discontinuity formed thereon which increases a resistance to fluid flow through the flow passage.

60. The apparatus according to claim 59, wherein the discontinuity forms a fluid expansion region in the flow passage.

61. The apparatus according to claim 58, further comprising a nozzle formed in the flow passage upstream of the intersection.

62. The apparatus according to claim 61, further comprising a bypass passage for flow of the fluid to bypass the nozzle, and wherein the fluid flowing through the bypass passage impinges laterally on the fluid flowing through the nozzle, thereby laterally deflecting the fluid flowing through the nozzle toward the flow region.

63. The apparatus according to claim 58, further comprising a vane positioned at the intersection, the vane influencing the fluid to flow toward the flow region.

64. The apparatus according to claim 63, wherein the vane is positioned outside of the flow passage, whereby access through the flow passage is unhindered by the vane.

65. An electrical power generating system, the system comprising:

a flow passage having a longitudinal axis;

a flow rotating structure which influences fluid flowing through the flow passage to rotate about the longitudinal axis; and

a rotationally mounted device which rotates in response to the fluid rotating about the longitudinal axis.

66. The system according to claim 65, wherein the device includes at least one internal vane, and wherein rotating fluid which impinges on the vane causes the device to rotate.

67. The system according to claim 65, wherein rotation of the device generates electrical power.

68. The system according to claim 65, further comprising an electrical generator connected to the device.

69. The system according to claim 65, wherein the flow rotating structure influences the fluid to flow toward an outer periphery of the flow passage.

70. The system according to claim 69, wherein the device is positioned about the outer periphery of the flow passage.

71. The system according to claim 65, wherein the flow passage extends through the flow rotating structure, and extends through the device.

72. The system according to claim 65, wherein the flow rotating structure includes at least one helically configured projection extending into the flow passage.

73. An apparatus for redirecting fluid flow therethrough, the apparatus comprising:

a first flow passage extending in the apparatus, the first flow passage being configured for flow of fluid therethrough, and for well tool access therethrough;

a flow region in communication with the first flow passage on a lateral side of the first flow passage; and

multiple flow restrictors in the first flow passage, the flow restrictors influencing the fluid to flow away from the first flow passage.

74. The apparatus according to claim 73, wherein the flow restrictors influence the fluid to flow toward the flow region.

75. The apparatus according to claim 73, wherein the flow restrictors influence the fluid to flow toward an electrical power generator in the flow region.

76. The apparatus according to claim 73, wherein the flow restrictors influence the fluid to flow toward a fluid sampler in the flow region.

77. The apparatus according to claim 73, wherein the flow restrictors influence the fluid to flow toward a fluid sensor in the flow region.

78. The apparatus according to claim 73, wherein the flow region is laterally recessed into a sidewall of the first flow passage.

79. The apparatus according to claim 73, wherein the flow region is formed in a second flow passage at least partially isolated from the first flow passage by a wall therebetween.

80. An apparatus for redirecting fluid flow therethrough, the apparatus comprising:

a flow passage extending in the apparatus, the flow passage being configured for flow of fluid therethrough, and for well tool access therethrough;

a flow region in communication with the flow passage on a lateral side of the flow passage; and

a flow restricting device which influences an increasing proportion of the fluid to flow through the flow region, instead of through the flow passage, as a rate of fluid flow through the apparatus increases.

81. The apparatus according to claim 80, wherein the device increasingly obstructs fluid flow through the flow passage as the rate of fluid flow increases.

82. The apparatus according to claim 80, wherein the device increasingly opens the flow passage for well tool access therethrough as the rate of fluid flow decreases.

83. The apparatus according to claim 80, wherein the device influences the fluid to flow toward an electrical power generator in the flow region.

84. The apparatus according to claim 80, wherein the device influences the fluid to flow toward a fluid sampler in the flow region.

85. The apparatus according to claim 80, wherein the device influences the fluid to flow toward a fluid sensor in the flow region.

86. The apparatus according to claim 80, wherein the device is generally bellows-shaped.

87. The apparatus according to claim 86, wherein the bellows-shaped device includes multiple flow restrictors formed internally therein.

88. The apparatus according to claim 86, wherein the fluid flows through an interior of the bellows-shaped device.

89. The apparatus according to claim 80, wherein the device is expandable in a longitudinal direction relative to the flow passage.

90. The apparatus according to claim 80, wherein the device has a minimum internal dimension which varies in response to the rate of fluid flow.

91. The apparatus according to claim 90, wherein the minimum internal dimension decreases as the rate of fluid flow increases.

92. The apparatus according to claim 90, further comprising a biasing device which biases the flow restricting device to a configuration in which the minimum internal dimension is at a maximum value.

93. The apparatus according to claim 80, wherein the flow restricting device comprises a movably mounted vane.

94. The apparatus according to claim 93, wherein the vane displaces and increasingly restricts fluid flow through the flow passage as the rate of fluid flow through the apparatus increases.

95. The apparatus according to claim 93, further comprising a biasing device which biases the vane to displace and increasingly open the flow passage for well tool access therethrough as the rate of fluid flow through the apparatus decreases.